

Implications of Climate Change on Brazilian Emergency Medicine

Implicaciones del Cambio Climático en la Medicina de Emergencia Brasileña

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ABSTRACT

Introduction: climate change poses a significant global health threat, impacting human health through extreme weather events, disruptions to food systems, and the spread of diseases. Brazilian emergency medicine faces unique challenges, particularly in response to climate-related crises such as floods, heatwaves, and wildfires. This study aims to discuss the implications of climate change on Brazilian emergency medicine and the roles emergency physicians must adopt to address these challenges.

Methods: a narrative literature review was conducted, focusing on recent events and actions taken by Brazilian emergency physicians and institutions. Key topics analyzed include extreme weather events, disease outbreaks, and public health interventions. Institutional reports and clinical guidelines from the Associação Brasileira de Medicina de Emergência (ABRAMEDE) were also reviewed.

Results: Brazil has been increasingly affected by climate-related disasters, particularly in states like Rio Grande do Sul. Emergency departments were overwhelmed during recent floods and heatwaves. Arboviral diseases such as dengue have surged, exacerbated by rising temperatures. Wildfires, particularly in the Amazon, have further strained emergency services, with respiratory diseases and logistical challenges in patient transport becoming critical issues. ABRAMEDE has issued recommendations on hospital disaster preparedness and clinical guidelines to mitigate these health crises.

Conclusions: Brazilian emergency physicians must focus on enhancing climate-related education, increasing resource allocation for emergency departments, and improving disaster preparedness. These steps are crucial for addressing the evolving health challenges posed by climate change, particularly in vulnerable populations. Emergency medicine must adapt to safeguard public health as environmental conditions continue to shift.

Keywords: Climate Change; Emergency Medicine; Disaster Planning.

RESUMEN

Introducción: el cambio climático representa una amenaza significativa para la salud global, afectando la salud humana mediante eventos climáticos extremos, interrupciones en los sistemas alimentarios y la propagación de enfermedades. La medicina de emergencia en Brasil enfrenta desafíos únicos ante crisis climáticas como inundaciones, olas de calor e incendios forestales. Este estudio examina las implicaciones del cambio climático en la medicina de emergencia brasileña y los roles que los médicos de emergencia deben asumir.

Métodos: se realizó una revisión narrativa de la literatura sobre eventos recientes y acciones tomadas por médicos e instituciones brasileñas, analizando eventos climáticos extremos, brotes de enfermedades e intervenciones de salud pública. También se revisaron informes institucionales y guías clínicas de la Associação Brasileira de Medicina de Emergência (ABRAMEDE).

Resultados: Brasil ha sido gravemente afectado por desastres climáticos, especialmente en estados como Rio Grande do Sul. Los servicios de emergencia fueron desbordados durante inundaciones y olas de calor. Las enfermedades como el dengue han aumentado debido al calentamiento global. Los incendios forestales en el Amazonas también han agravado la situación, con problemas respiratorios y logísticos en el transporte de pacientes. ABRAMEDE ha emitido guías sobre preparación hospitalaria y manejo clínico en desastres.

Conclusiones: los médicos de emergencia en Brasil deben mejorar la educación sobre el cambio climático, aumentar los recursos en emergencias y fortalecer la preparación ante desastres para enfrentar los retos de salud crecientes, particularmente en poblaciones vulnerables, conforme cambian las condiciones ambientales.

Palabras clave: Cambio Climático; Medicina de Emergencia; Planificación en Desastres.

INTRODUCTION

Climate change is increasingly recognized as a significant global health threat. According to the World Health Organization, climate change is impacting health in myriad ways, including an increase in deaths and illnesses from extreme weather events such as heatwaves, storms, and floods; disruption of food systems; the spread of zoonotic, food-, water-, and vector-borne diseases; and mental health disorders. Emergency physicians are on the frontlines, witnessing the direct consequences of these shifts in real-time. There are seven key roles that emergency physicians must embrace: clinical practice improvements, building resilient emergency departments (EDs) and healthcare systems, adaptation and public health engagement, disaster preparedness, mitigation, research, and education.⁽¹⁾ These actions are equally vital for Brazilian physicians facing the mounting challenges of climate-related health crises. To protect vulnerable populations, it is crucial to establish a locally driven, responsive, systemwide preparation to deal with climate-induced disasters.

Brazil, particularly the southern state of Rio Grande do Sul—recognized as the birthplace of emergency medicine in the country—has already faced the brunt of these challenges. The recent devastating floods and storms that swept across the region caused numerous deaths and displaced thousands. Emergency departments were overwhelmed by patients with acute conditions. The Associação Brasileira de Medicina de Emergência (ABRAMEDE) swiftly responded, issuing a position statement on hospital disaster preparedness and a recommendation for chemoprophylaxis for leptospirosis, a disease prevalent in such environmental crises.^(2,3) These actions underscore the vital role of emergency physicians in navigating the intricate relationship between climate change and public health, especially as Brazil continues to face increasingly frequent extreme weather events.

The public health impact of rising temperatures in Brazil is another pressing concern. Heatwaves, which have become more frequent and severe, are placing unprecedented strain on healthcare systems, particularly emergency departments. Simultaneously, there has been a surge in arboviral diseases, such as dengue fever, exacerbated by these climate shifts. Dengue outbreaks have prompted ABRAMEDE to release Clinical Guidelines for the Management of Dengue in Adult Patients in the Emergency Department.⁽⁴⁾ Emergency physicians must be prepared to recognize, diagnose, and treat these cases swiftly, as dengue has a significant impact on morbidity and mortality, particularly in urban centers.

The widespread wildfires affecting Brazil further illustrate the multifaceted health crises linked to climate change. The Amazon rainforest, often referred to as the “lungs of the Earth,” has been ravaged by fires at an alarming rate. During our team’s recent research on the fluvial transport of critically ill patients in the Amazon, we observed firsthand the ecological devastation. The Madeira River, a key artery for the region and a principal tributary of the Amazon, had dramatically dried up. This drought exacerbated the challenge of accessing and evacuating patients from remote riverine communities, further straining the resources of emergency medical teams. Meanwhile, in São Paulo, the wealthiest state in the federation, the Secretary of Health issued a request for state hospitals to develop contingency plans due to the rise in emergency cases and hospitalizations linked to respiratory diseases, a direct consequence of the smoke and air pollution caused by the wildfires.

In conclusion, there are three key areas where Brazilian emergency physicians are focusing their efforts to better respond to the health impacts of climate change. First, there is a growing emphasis on increasing education about climate change and planetary health among healthcare professionals, ensuring they are equipped with the knowledge to address climate-related pathologies. Second, there is an urgent need for increased resource allocation within emergency departments to handle the influx of climate-related cases. This includes expanding access to respiratory support, mental health resources, and rapid diagnostic kits for vector-borne diseases. Finally, enhanced disaster planning and preparedness for climate-related emergencies must be prioritized to protect Brazil’s most vulnerable populations from the inevitable consequences of a changing climate.

As the climate continues to shift, so too must our response, adapting emergency medicine to meet the evolving needs of our communities. Emergency physicians stand at the forefront of this response, uniquely positioned to advocate for and implement changes that will safeguard public health in the face of environmental upheaval.

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